

# CITY AND COUNTY OF DENVER

DEPARTMENT OF PUBLIC WORKS  
ENGINEERING DIVISION

## URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

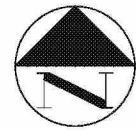
UDFCD PROJECT NO. 09-07.14, PILAR NO. 2010-0517

HIGH STREET OUTFALL & 40TH AVENUE SYSTEM

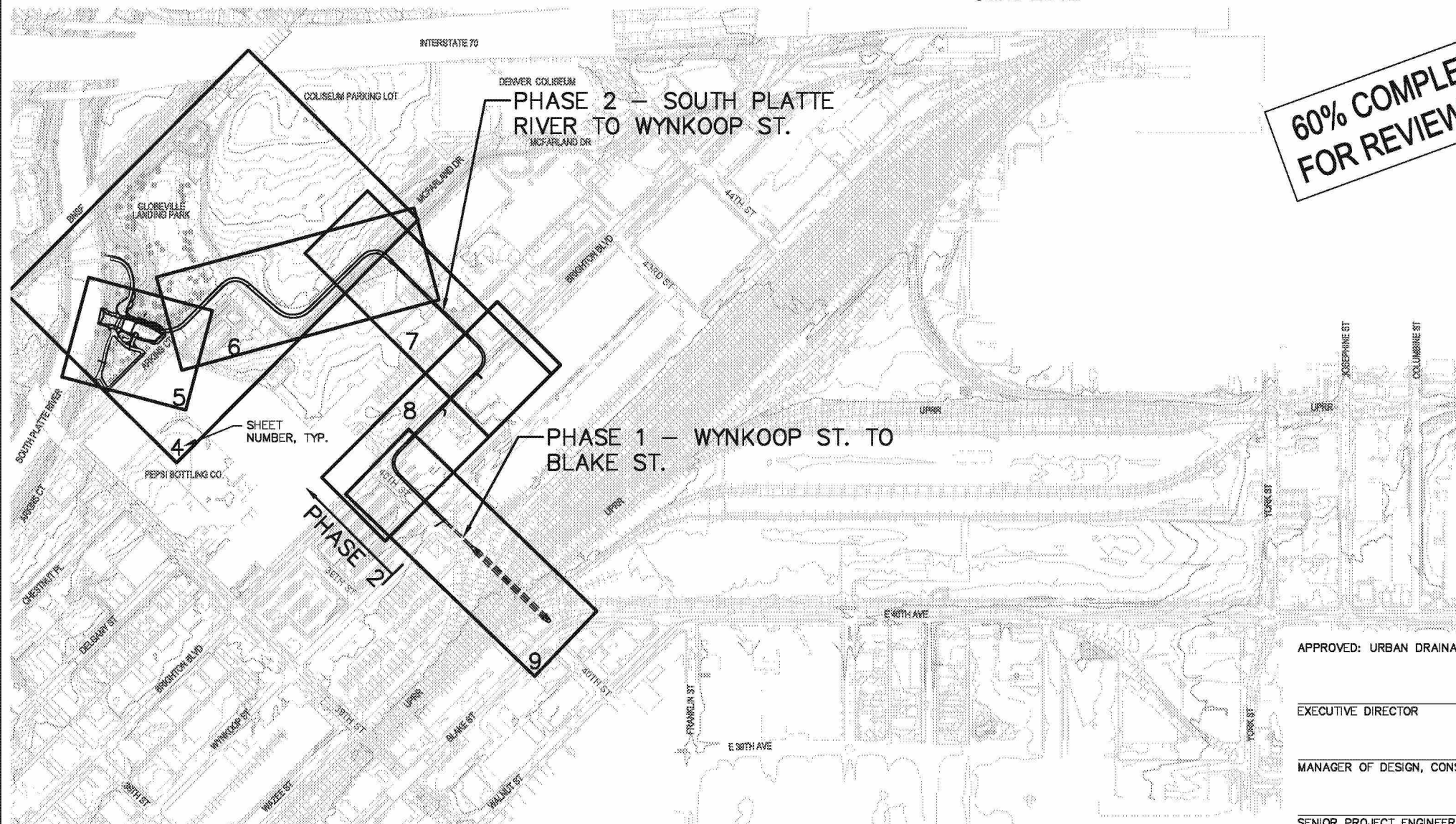
PHASE 2 - S. PLATTE RIVER TO WYNKOOP STREET

FINAL DESIGN DRAWINGS

June 2012



Original Scale: 1"=300'  
0 150 300 600



60% COMPLETION  
FOR REVIEW ONLY

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3	GLOBEVILLE PARK DEMOLITION AND RELOCATION PLAN
4	GLOBEVILLE PARK OUTFALL PLAN
5	PLAN AND PROFILE STA. 0+00 TO STA. 5+50
6	PLAN AND PROFILE STA. 5+50 TO STA. 15+00
7	PLAN AND PROFILE STA. 15+00 TO STA. 21+00
8	PLAN AND PROFILE STA. 21+00 TO STA. 29+00
9	PLAN AND PROFILE STA. 29+00 TO STA. 39+00
10	STORM SEWER LATERALS
11	SANITARY SEWER RELOCATION PLAN AND PROFILE
12	DROP STRUCTURE PLAN & DETAILS
13	PEDESTRIAN BRIDGE PLAN AND PROFILE
14	ROCK DETAILS
15	OUTFALL CHANNEL PLAN
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17	BOULDER WALL DETAILS
18	MISCELLANEOUS DETAILS
19	MCFARLAND DRIVE GRADING PLAN
20	MCFARLAND DRIVE CROSS SECTIONS
21	MCFARLAND DRIVE CROSS SECTIONS
22	ENLARGED PLAN - PEPSI BOTTLING CO. AND CVJ AXLES
23	ENLARGED PLAN - 40TH ST. AND BRIGHTON BLVD.
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25	STORM SEWER DETAILS
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S-8	CONCRETE CAP OVER SANITARY SEWER PIPES SECTION
W-1	12" WATER RELOCATION - COVER SHEET
W-2	12" WATER RELOCATION - GENERAL NOTES
W-3	12" WATER RELOCATION - SITE PLAN
W-4	12" WATER RELOCATION - PLAN AND PROFILE
L-1	LANDSCAPE PLAN
L-2	PLAZA PLAN
IR-1	IRRIGATION LAYOUT PLAN

APPROVED: URBAN DRAINAGE & FLOOD CONTROL DISTRICT

EXECUTIVE DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

MANAGER OF DESIGN, CONSTRUCTION AND MAINTENANCE PROGRAM \_\_\_\_\_ DATE \_\_\_\_\_

SENIOR PROJECT ENGINEER OF DESIGN, CONSTRUCTION AND MAINTENANCE PROGRAM \_\_\_\_\_ DATE \_\_\_\_\_

WHPacific  
Affix Seal:

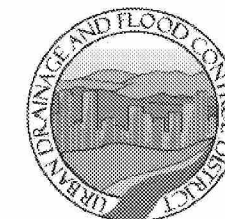
SUBMITTED BY: \_\_\_\_\_ PROJECT DESIGN ENGINEER \_\_\_\_\_ DATE: \_\_\_\_\_

THROUGH: \_\_\_\_\_ DIRECTOR OF ENGINEERING \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_ DIVISION OF SMALL BUSINESS OPPORTUNITY \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_ CITY ENGINEER \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_ MANAGER OF PUBLIC WORKS \_\_\_\_\_ DATE: \_\_\_\_\_



By: Michael R. Galuzzi  
Licensed Professional Engineer  
State of Colorado

No: 17593

Name of Firm: WHPacific, Inc.

CALL UNCC  
TWO WORKING DAYS  
BEFORE YOU DIG  
1-800-922-1987  
uncc.org



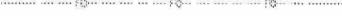
CITY AND COUNTY OF DENVER  
DEPARTMENT OF PUBLIC WORKS  
WASTEWATER CAPITAL  
PROJECTS MANAGEMENT  
2000 W. 3RD AVE. DENVER, CO 80223  
TEL: (303) 446-3610 FAX: (303) 446-3647

HIGH ST. OUTFALL & 40TH AVE. SYSTEM  
PHASE 2 - S. PLATTE RIVER TO WYNKOOP ST.

COVER SHEET

DRAWN BY: ELS  
DESIGNED BY: CIC  
APPROVED BY: MRG  
PROJECT NUMBER: 500975  
DATE: June 2012  
SHEET NO.: 1

1. CONTRACTORS PERFORMING WORK ON ANY WASTEWATER FACILITY OR APPURTENANCE MUST BE PROPERLY LICENSED AND HAVE A LICENSED PLUMBER OR DRAINLAYER ON SITE DURING THE WORK.
2. THE MOST RECENT EDITION OF THE WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS AND TECHNICAL SPECIFICATIONS APPLY TO ALL WORK. THE CONTRACTOR MUST BE IN POSSESSION OF THE STANDARD DETAILS AND TECHNICAL SPECIFICATIONS AT THE PRE-CONSTRUCTION CONFERENCE AND A COPY MUST REMAIN ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS AND TECHNICAL SPECIFICATIONS CAN BE VIEWED AT THE FOLLOWING WEBSITE ADDRESS: [WWW.DENVERGOV.ORG](http://WWW.DENVERGOV.ORG).
  - TYPE PUBLIC WORKS INTO THE SEARCH BOX (TOP RIGHT OF PAGE),
  - SELECT DIVISIONS AND AGENCIES,
  - UNDER ENGINEERING DIVISION, SELECT CAPITAL PROJECTS MANAGEMENT,
  - ON THE RIGHT SIDE UNDER RELATED LINKS CLICK ON WASTEWATER CAPITAL PROJECTS,
  - SELECT CONSTRUCTION DETAIL AND TECHNICAL SPECIFICATIONS.
3. THE CONSTRUCTION ACTIVITIES STORMWATER DISCHARGE PERMITS (STATE AND LOCAL), STREET-CUT PERMIT, AND STREET OCCUPANCY PERMIT (INCLUDING THE ASSOCIATED TRAFFIC CONTROL PLANS) ARE REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL OF THESE PERMITS. APPROVED COPIES OF ALL REQUIRED PERMITS MUST BE SUBMITTED TO THE PROJECT CONSTRUCTION ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. A PARKS AND RECREATION PERMIT WILL BE REQUIRED FOR ANY WORK OR OCCUPANCY OF PARK LAND. THIS INCLUDES BUT IS NOT LIMITED TO: DESIGNATED CITY PARKS, PARKWAYS, OPEN SPACE, TRAILS AND BIKE PATHS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL MAINTENANCE OF PARKS FACILITIES AFFECTED BY CONSTRUCTION ACTIVITIES. THIS INCLUDES BUT IS NOT LIMITED TO THE MAINTENANCE AND IRRIGATION OF LANDSCAPING ITEMS OUTSIDE OF THE WORK AREA WHICH ARE DISCONNECTED FROM SERVICE DUE TO CONSTRUCTION OPERATIONS. ALL COST FOR THIS WORK SHALL BE INCLUDED WITHIN ASSOCIATED BID ITEMS AND NO ADDITIONAL PAYMENT WILL BE MADE.
5. ALL DESIGN DRAWINGS PROVIDED AS PART OF THIS CONTRACT ARE FORMATTED FOR PRINTING FULL SIZE, ON STANDARD 22 X 34 INCH (ANSI D) PAPER SIZE AND TO HALF-SIZE (AND SCALE WHERE APPROPRIATE) ON STANDARD 11 X 17 PAPER SIZE. IT IS THE USER'S RESPONSIBILITY TO ENSURE THAT HARD COPIES OF PLANS UTILIZED FOR BIDDING OR CONSTRUCTION ARE PRINTED ON THE PROPER MEDIA SIZE AND THAT SCALES PROVIDED WITHIN THE DRAWINGS ARE CORRECTLY INTERPRETED.
6. "RED-LINED" DRAWINGS AND PRINTS ARE TO BE MAINTAINED BY THE CONTRACTOR AND SUBMITTED TO THE PROJECT CONSTRUCTION ENGINEER AT THE COMPLETION OF THE PROJECT. ANY AND ALL FIELD CHANGES MADE DURING CONSTRUCTION MUST BE NOTED. THE DRAWINGS WILL STATE "RED LINES" IN LARGE BLOCK LETTERS. THE RED-LINED DRAWINGS MUST BE RECEIVED AND ACCEPTED BY THE PROJECT CONSTRUCTION ENGINEER PRIOR TO FINAL ACCEPTANCE AND SETTLEMENT.
7. THE CONTRACTOR SHALL NOTIFY THE PROJECT CONSTRUCTION ENGINEER IMMEDIATELY OF "ANY" DISCREPANCIES OR VARIATIONS IN DRAWINGS & SPECIFICATIONS THAT EFFECT PRICING OR THAT COULD REQUIRE MODIFICATION TO THE DESIGN.
8. THE CITY AND COUNTY OF DENVER ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
9. ALL RANGE POINTS OR OTHER SURVEY MONUMENTS WHICH MAY BE DESTROYED DURING CONSTRUCTION SHALL BE TIED OUT AND RESET BY THE CONTRACTOR'S SURVEYOR PER CITY SURVEYING STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR PROPER NOTIFICATION AND PROTECTION OF ALL MONUMENTS ENCOUNTERED DURING CONSTRUCTION.
10. ALL ELEVATIONS SHOWN ARE NAVD83 DATUM, UNLESS OTHERWISE NOTED.
11. INLETS AND MANHOLES ARE NOT SHOWN TO SCALE ON THE PLAN AND PROFILE SHEETS.
12. INVERT ELEVATIONS AND CALCULATED PIPE SLOPES ON STORM AND SANITARY PROFILES ARE TO THE CENTER OF MANHOLE OR STRUCTURE. PIPE LENGTHS ARE TWO DIMENSIONAL LENGTHS AND ARE CENTER TO CENTER BETWEEN MANHOLES AND TO THE INSIDE EDGE OF INLETS.
13. NORTHING AND EASTING CALLOUTS ON TYPE 16 AND TYPE 14 INLETS ARE TO THE CENTER OF THE STRUCTURE AT THE FLOWLINE. NORTHING AND EASTING CALLOUTS ON MANHOLES ARE TO THE CENTER OF THE MANHOLE.
14. LOCATION OF INLETS AND/OR INLET CONNECTORS MAY BE ADJUSTED IN THE FIELD AT THE DIRECTION OF THE PROJECT CONSTRUCTION ENGINEER IN CONJUNCTION WITH DESIGN INTENTION. ALL INLET CONNECTIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE LOCATIONS AND DEPTHS.
15. DEPTHS OR BOTTOM OF STRUCTURE ELEVATIONS ARE PROVIDED FOR INLETS WITHIN THE PROJECT SCOPE. HOWEVER, THESE ELEVATIONS MAY VARY BASED ON FIELD CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ESTABLISH INLET DEPTHS AND COMPLETE CONSTRUCTION IN CONFORMANCE WITH APPLICABLE STANDARD DETAIL DRAWINGS BASED ON CLEARANCES OF ADJACENT UTILITIES WHILE MAINTAINING MINIMUM REQUIRED GRADES ON LATERAL CONNECTIONS.
16. ALL SEWER MANHOLES MUST BE MAINTAINED AND ACCESSIBLE DURING CONSTRUCTION.
17. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL LIVE SANITARY SEWER SERVICES (TAPS) AND ENSURE THAT ALL ACTIVE TAPS AFFECTED BY THE CONSTRUCTION OPERATIONS ARE PROPERLY RECONNECTED. IN THE EVENT OF A SANITARY SEWER BACKUP, WITHIN THE CONSTRUCTION LIMITS, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ENSURING BUSINESSES AND RESIDENCES AFFECTED ARE IMMEDIATELY ADDRESSED AND PLACED BACK INTO SERVICE.
18. ALL SANITARY MANHOLES ARE 4' DIAMETER WITH "A" BASE AND CONCENTRIC CONE UNLESS NOTED OTHERWISE.
19. CHANGES IN THE ELEVATION OF AN EXISTING BRICK MANHOLE RING AND COVER MAY REQUIRE THE USE OF A PRE-CAST CONCRETE MANHOLE FLAT-TOP SECTION OR MANHOLE RECONSTRUCTION AT THE DISCRETION OF THE PROJECT INSPECTOR OR THE PROJECT CONSTRUCTION ENGINEER.
20. ALL MANHOLES BUILT WITHIN THIS PROJECT SHALL INCLUDE EITHER A 4" OR 8" CAST IRON RISER WITH 3" STEEL ADJUSTING RINGS.
21. REINFORCING STEEL:
  - A. ALL REBAR SHALL BE PLACED PER SHOP DRAWINGS APPROVED BY THE PROJECT CONSTRUCTION ENGINEER.
  - B. REINFORCING STEEL SHALL BE HOT ROLLED DEFORMED BARS, ASTM DESIGNATION A615, GRADE 60, UNLESS OTHERWISE SHOWN OR NOTED.
  - C. LAPS SHALL BE CLASS B (SPLICE NO MORE THAN HALF OF BARS AT ANY LOCATION), EXCEPT WHERE OTHERWISE SHOWN OR NOTED. LAPS IN HORIZONTAL STEEL SHALL BE STAGGERED UNLESS OTHERWISE SHOWN.
  - D. ALL CROSSING REINFORCING BARS SHALL BE TIED.
  - E. FOR ALL CAST-IN-PLACE REINFORCED CONCRETE STRUCTURES THE CONTRACTOR SHALL SUPPLY ADEQUATE BAR CHAIRS AND SUPPORTS FOR REINFORCING SUBJECT TO THE APPROVAL OF THE PROJECT CONSTRUCTION ENGINEER.
22. EXACT LOCATION OF ALL SAW CUTS SHALL BE DETERMINED IN THE FIELD BY THE CONSTRUCTION PROJECT ENGINEER.
23. DOWELS, PIPES, WATER STOPS AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION WHILE CONCRETE IS BEING PLACED.
24. J67 BEDDING OR SPECIAL BEDDING IS REQUIRED FOR ALL STORM AND SANITARY SEWER PIPE, IN ACCORDANCE WITH THE STANDARD DETAILS AND TECHNICAL SPECIFICATIONS. OTHER FACILITIES MAY REQUIRE DIFFERENT BEDDING TYPES, PER SPECIFIC OWNER REQUIREMENTS.
25. THE CONTRACTOR SHALL BACKFILL AND FINE GRADE ALL CUT OR FILL SLOPES TO MATCH EXISTING CONDITIONS TO THE SATISFACTION OF THE PROJECT CONSTRUCTION ENGINEER. WHERE EXISTING LAWNS ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS THE CONTRACTOR SHALL RE-SEED AND/OR SOO THE AFFECTED AREA TO A CONDITION EQUAL TO, OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. ALL COSTS ARE INCLUDED WITHIN APPURTENANT BID ITEMS.

	Fence
	Existing Underground Telephone
	Existing Fiber Optic
	Existing Underground Electric
	Existing Overhead Electric
	Existing Gas Line
	Existing Water Main
	Existing Sanitary Sewer
	Existing Storm Sewer

 Proposed Manhole
  Proposed Access Riser

 (Type 13/16) Valley Inlet  
 (Type 14 or Type 16 ) Inlet

 Proposed Storm Sewer Line

**Legend**

- Benchmark
- Chiseled "X"
- Land Corner
- Pin & Cap
- Property Corner
- Range Point
- Rebar

**Control Point/Found Monument**

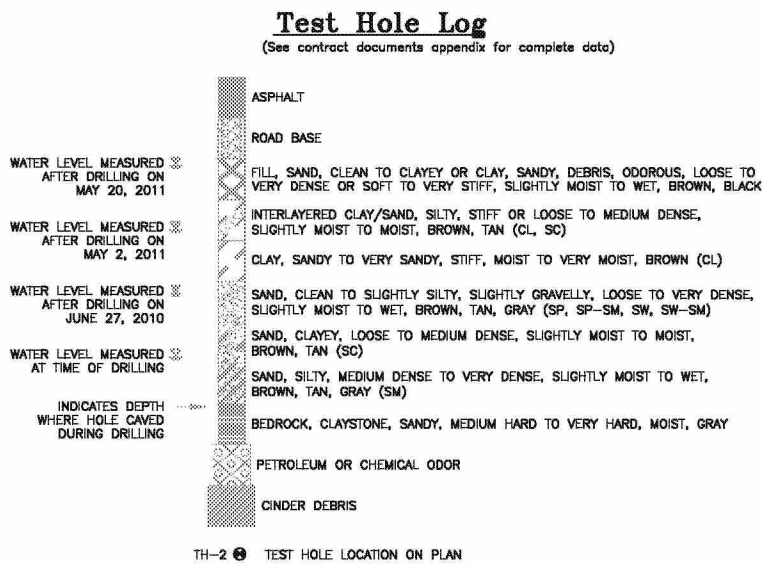
Section Line

Property Line/R.O.W. Line

Easement Line

Construction Limits

E. - CENTER LINE  
 CCD - CITY AND COUNTY OF DENVER  
 C. & G. - CURB & GUTTER  
 CFS - CUBIC FEET PER SECOND  
 C.G.& SW. - CURB,GUTTER & SIDEWALK  
 C.H. - CURB HEAD  
 CLSM - CONTROLLED LOW STRENGTH MATERIAL  
 C.P.M. - CAPITAL PROJECTS MANAGEMENT  
 D.W.B. - DENVER WATER BOARD  
 E.F. - EACH FACE  
 E.G.L. - ENERGY GRADE LINE  
 E.O.A. - EDGE OF ASPHALT  
 E.S. - EACH SIDE  
 E.W. - EACH WAY  
 F.G. - FINAL GRADE  
 F - FLOW LINE  
 H.G.L. - HYDRAULIC GRADE LINE  
 INV. - INVERT  
 LL - LAND LINE  
 MH - MANHOLE  
 M.T.S. - NOT TO SCALE  
 P - PROPERTY LINE  
 PVC - POLY VINYL CHLORIDE  
 Q<sub>f</sub> - 5 YEAR DESIGN FLOW  
 Q - FULL FLOW CAPACITY AT INDICATED S  
 RCP - REINFORCED CONCRETE PIPE  
 R.L. - RANGE LINE  
 T.O.C. - TOP OF CONCRETE  
 T.O.P. - TOP OF PIPE  
 T.O.S. - TOP OF SLAB  
 T.O.W. - TOP OF WALL  
 TYP. - TYPICAL  
 U.N.O. - UNLESS NOTED OTHERWISE  
 W.W.D. - WASTEWATER MANAGEMENT DIVISI



**811**  
UTILITY NOTIFICATION  
CENTER OF COLORADO (UNCC)  
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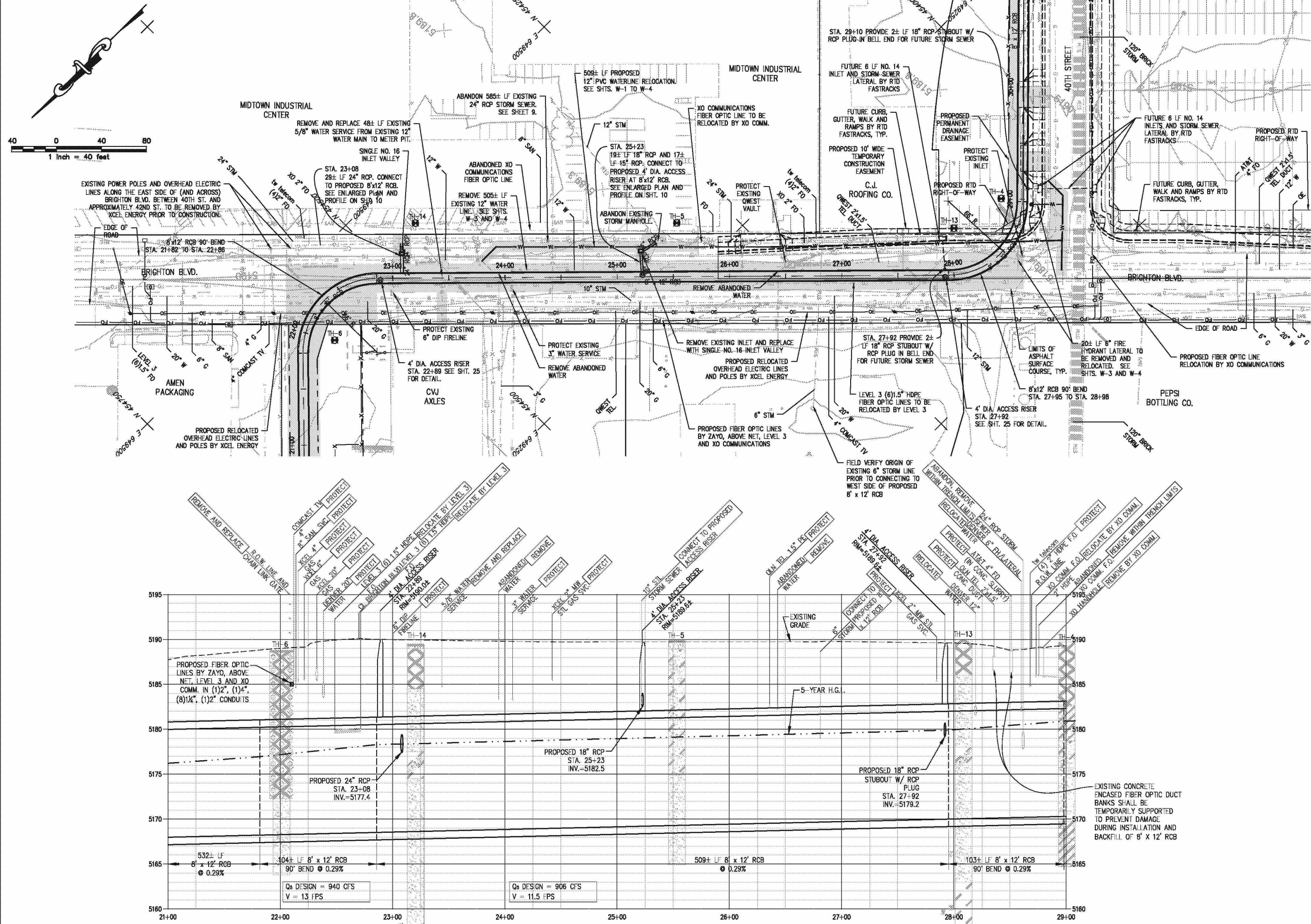












BY	
DATE	
DESCRIPTION OF REVISIONS	
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CALL UNCC TWO WORKING DAYS BEFORE YOU DIG 1-800-922-1967 UTILITY INFORMATION CENTER OF	
CITY AND COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION CAPITAL PROJECT MANAGEMENT 2000 W. 3RD AVE. DENVER, CO 80203 TEL.: (303) 446-3610 FAX: (303) 446-3647	
HIGH ST. OUTFALL & 40TH AVE. SYSTEM PHASE 2 - S. PLATTE RIVER TO WYNKOOP ST. PLAN AND PROFILE STA. 21+00 TO STA. 29+00	
DRAWN BY: BLG, BLS	
DESIGNED BY: CJC	
APPROVED BY: MRG	
PROJECT NUMBER: 500975	
DATE: June 2012	
SHEET NO.: 8	